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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/604,620	06/27/2000	Narsing K. Vijayrao	042390.P8995	5234

7590 11/19/2003

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EXAMINER

NGO, CHUONG D

ART UNIT	PAPER NUMBER
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2124

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DATE MAILED: 11/19/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/604,620

Applicant(s)

VIJAYRAO ET AL.

Examiner

Chuong D Ngo

Art Unit

2124

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAIL OF ACTION

1. Claims 1-23 stand rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's admission of prior art disclosed in figure 1 of the instant application in view of Quach et al. "An Improved Algorithm for High-Speed floating-Point Addition".

The admitted prior art in figure 1 an FMAC having a multiplier (102), a PKG generator (104), and adder 106, a LZA (108), a normalization unit (110), and a rounding unit (112). It is noted that the admitted prior art in figure 1 does not combine the rounding with the adder by including a plus-one, a plus-two and multiplexor as claimed. However, Quach et al. suggest a combination of rounding into the adder stage as claimed (see page 3, lines 4-10) by providing an adder (A+B) with a plus-one (A+B+1) (n-bit compound adder), a multiplexor (Mux) responsive to a signal (Cin) from rounding control unit for selecting one of the outputs from the adder and a plus-one (see figure 1). Quach et al. also discloses plus-two in the adder stage for performing rounding in round to infinity modes (see the foot note 1 in page 3). Thus, it would have been obvious to a person of ordinary skill in the art to combine the rounding with the adder of the admitted prior art in figure 1 by further providing a plus-one, a plus-two and multiplexor as taught by Quach et al. in order to perform rounding in different modes including round to infinity modes with a reduced processing stages and thus to reduce the processing time.

2. Applicant's arguments filed on 08-28-2003 have been fully considered but they are not persuasive.

It is respectfully submitted that the FMAC (100) in applicant's admitted prior art figure 1 clearly employs a carry look ahead adder including a PKG (104) and ADDER (106) for determining the sum of two signals which are the SUM and CARRY outputted from the MULTIPLIER (102). The sum is then normalized and rounded by elements 110 and 112. It should be noted that variable "A" and "B" in the equations $P=A+B$, $G=A \times B$, $K=\text{complement}(A) \times \text{complement}(B)$ are not the operands A and B input to the MULTIPLIER (102) but the bits of the two signals SUM and CARRY. Thus, the combination elements 104-112 in the admitted prior art is an adder for adding two signals (SUM and CARRY) with rounding and normalization but not in a reduced processing stages. In addition, Quach disclose an addition of two signals with rounding in different modes including round to infinity modes with a reduced processing stages. Therefore, it would have been obvious to a person of ordinary skill in the art to combine applicant's admitted prior art with Quach as set forth in the rejection in order to perform the addition of two signals SUM and CARRY with rounding in different modes including round to infinity modes with a reduced processing stages, and thus to reduce the processing time.

3. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

4. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Chuong D. Ngo whose telephone number is (703) 305-9764. The examiner can normally be reached on Tuesday-Friday from 7:30 AM to 6:00 PM.

The fax phone number for the organization where this application or proceeding is assigned is (703)872-9306

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900



Chuong D. Ngo
Primary Examiner
Art Unit 2124

11/17/2003